WHAT IS CLAIMED IS:

1. A power transmission chain and tensioner system for an automotive engine application, said chain tensioner and power transmission chain system comprising:

a plurality of sprockets including at least one driving sprocket connected to a power input and at least one driven sprocket connected to a power output;

a chain wrapped around the plurality of sprockets, the chain including at least a first strand portion having some of links being pulled by the driving sprocket and a second strand portion having some links pulling the driven sprocket;

a source for the pressurized flow of hydraulic fluid; a rotary actuating hydraulic tensioner having a stationary portion and a rotatable body in operative relation to the stationary portion, the rotatable body movable about a central pivot point and in flow communication with the hydraulic fluid source; and

the rotatable body having an outer face provided with at least one tensioner arm operatively connected thereto, the tensioner arm having a friction surface positioned in contact with at least one of the chain strands to exert force on the strand, and the hydraulic fluid pressure within the rotary tensioner effective to maintain the rotatable body in a position to hold the friction surface against the strand with sufficient force to provide tension in the chain.

2. The system of claim 1 wherein the rotatable body is biased by one or more springs to rotate about the central pivot in first direction moving the tensioner arm friction

surface against the chain strand and the hydraulic fluid provides biasing pressure within the rotary tensioner effective to resist the movement of the rotatable body in a reverse, second direction due to pressure against the tensioner arm by the strand.

3. The system of claim 2 wherein the spring force required to maintain the tensioner arm against the chain strand is less than the spring force required in a rotary tensioner system that does not utilize pressurized hydraulic fluid.

4. The system of claim 2 wherein the stationary portions of the tensioner includes a central pivot firmly affixed to said stationary portion, the rotatable body is mounted on the pivot within the stationary portion, and the stationary portion has inner surfaces cooperating with surfaces of the rotatable body to form at least one first chamber for receiving the pressurized hydraulic fluid therein, and the rotatable body is provided with abutment surfaces disposed to receive biasing force from the springs and the hydraulic fluid.

5. The system of claim 4 wherein the stationary portion and the rotatable body are provided with cooperating surfaces forming at least one second chamber vented to the ambient atmosphere, the venting sized to permit the reversible flow of air and other fluids from the second chamber with the movement of rotatable body around the pivot point.

6. The system of Claim 4 wherein the springs and the pressurized hydraulic fluid are disposed within at least one of first chamber; the rotary actuator is provided with a valve limiting the loss of hydraulic fluid from the chamber first; and the surfaces of the stationary portion and the rotatable body are generally in sealing relation adjacent to the first

chambers effective to limit the loss of hydraulic fluid from the chamber.

7. The rotary actuator of claim 5 wherein the springs are disposed in at least one second chamber and the rotary actuator is provided with a valve limiting the loss of hydraulic fluid from the first chamber.

8. A rotary actuating hydraulic tensioner for maintaining a desired degree of tension in a chain system in an engine comprising,

a stationary housing and a rotatable body disposed within the housing, the rotatable body movable about a central pivot point and in flow communication with a pressurized hydraulic fluid source;

at least one first chamber within the tensioner for receiving the pressurized hydraulic fluid, the first chamber disposed to move the rotatable body about the pivot point when pressurized by the hydraulic fluid, and

at least one tensioner arm operatively connected to the rotatable body with at least one frictional contact surface positioned to contact at least a portion of the chain to exert force on the chain when the rotatable body is moved in a first direction relative to the tensioner arm.

9. The rotary actuating hydraulic tensioner of claim 8, wherein the first chamber contains at least one spring disposed within the chamber bias the rotatable body in the first direction and to position the tensioner arm contact surface against the chain.

10. The rotary actuating hydraulic tensioner of claim 11 wherein the hydraulic fluid within the first chamber is generally retained within the first chamber to resist the movement of the rotatable body in a second reverse direction when force is exerted against the tensioner arm contact surface by the chain.

11. The rotary actuator of claim 10 wherein the tensioner is provided with a valve effective to maintain the hydraulic pressure within the first chamber.

12. The rotary actuator of claim 10 wherein the tensioner is provided with at least one second chamber vented to the ambient atmosphere and positioned to evacuate air or other fluids from the second chamber within the rotatable body is moved in the first direction.

13. The actuator of claim 10 wherein said rotary actuating hydraulic tensioner is positioned between a tight strand and a slack strand of the chain.

14. A rotary actuating hydraulic tensioner for maintaining a desired degree of tension in a chain system in an engine comprising,

a stationary housing and a rotatable body disposed within the housing, the rotatable body movable about a central pivot point and in flow communication with a high pressure hydraulic fluid source;

a first arm and a second arm opposite the first arm, each arm movably attached to pin assemblies fixed to rotatable body;

a first shoe disposed on the first arm to contact a slack strand of the chain, the

first shoe disposed outside of the slack strand and positioned to receive the slack strand along a substantial length of the first shoe;

a second shoe disposed on the second arm to contact a tight strand of the chain, the second shoe disposed outside the tight strand and positioned to receive the tight strand along a substantial length of the second shoe;

the rotatable body of the actuating hydraulic tensioner movable about the pivot point to urge the first and second shoes laterally inward, relative to the chain to impart tension to said chain.

15. The actuator of claim 14 wherein the first and second pin assemblies relative to the pivot point permitting the tensioner arms to adjust to movement of the chain strands along the shoes.

16. The actuator claim 14 wherein the first and second pin assemblies are in substantial alignment with the pivot point along a central axis extending through the pivot point.

17. The actuator of claim 16 wherein said first and second pin assemblies are equally spaced apart relative to the pivot point along the central axis.

18. The actuator of claim 17 wherein the first pin assembly is placed a first distance from the central axis and the second pin assembly is spaced a second distance from

the central axis, the first distance being different from the second distance to move the tensioner arms different distances relative to the chain.

19. The actuator of claim 14 wherein the first arm is providing a first tensioning force and the second arm is providing with a second tensioning force, the first force being greater than the second force.

20. The power transmission chain and tensioner system of claim 14 wherein the rotary actuating hydraulic tensioner is located outside one strand of the chain, the tensioner is in communication with a single tensioner arm through a short lever; the lever is disposed upon one of the pin assemblies and is positioned at one extreme of the arm, the tensioner arm is provided with a fixed pivot pin at another extreme; and the tensioner arm is provided with a shoe disposed to contact and exert force against the chain to provide tension to the chain.

21. The actuator claim 19 wherein rotation of the rotatable body of the tensioner communicates linear force through the lever to the arm thereby imparting tension to at least a portion of the chain.

22. The rotary actuator of claim 14 wherein the first and second arms are extensions of the same rigid arm assembly;

the arm assembly being disposed upon opposing rotating pin assemblies affixed to the face of the rotatable body of the tensioner, and with the arms rigidly disposed outward from the rotating body portion,

a first shoe disposed on the first arm, the first shoe extending outside a slack strand of the chain, the slack strand of the chain running along a substantial length of the first shoe;

a second shoe disposed on the second arm, the second shoe extending inside a slack strand of the chain, the slack strand of the chain running along a substantial length of the second shoe;

the arms displaced from the axis of the rigid arm assembly by an angle sufficient to allow optimal contact of the shoes of the arm assembly with the slack strand of the chain assembly, each the arms held at such an angle to the axis of the rigid arm assembly as to retain each the arms in parallel aspect in relation to the other arm.

23. The rotary actuator of claim 22 wherein the first and second rotating pin assemblies are each pivoted about a single point, the pivoting movement of the pin assemblies permitting the attached arm assemblies to adjust to movement of the chain strands along the shoes, thereby creating tension in the chain assembly, and causing the slack strand to traverse a serpentine path.